DOCUMENT RESUME

ED 410 924 IR 018 486

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TITLE IS Staff Migration to New Technology.
PUB DATE 1997-00-00
NOTE 7p.; In: Association of Small Computer Users in Education (ASCUE) Summer Conference Proceedings (30th, North Myrtle Beach, SC, June 7-12, 1997); see IR 018 473.
PUB TYPE Guides - Non-Classroom (055) -- Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Community Colleges; *Computer Networks; Computers; *Information Systems; Inservice Education; *Modernization; On the Job Training; *Staff Development; Staff Orientation; *Staff Utilization; *Technological Advancement; Two Year Colleges
IDENTIFIERS *Technology Implementation; Technology Integration

ABSTRACT

This paper provides guidance through the process of upgrading the skills of information systems staff to fit the implementation of new technology. Specific examples are provided for the technology implementation at Mott Community College (Michigan). As with many major transitions, the key to success is planning. It is important to completely and thoroughly analyze existing technology, the new technology being implemented, and the strengths and weaknesses of each individual on the Information Systems staff. To determine the makeup of the Information Staff of the future: evaluate the new technology and the organization's needs; determine the organization chart for the new technology; determine the generic skills needed for each position; develop a job description for each "new" position; and identify the specific technical skills needed for each position. After developing a general timeline, Mott Community College formed a migration team to help with the transition and to: help implement the new system; help determine the best set of procedures and policies; work with the existing staff to help them contribute to decisions; and train existing staff. The migration team was critically important to the success of Mott Community College's transition. The paper also provides guidance for selling the staff on the new technology; building the training plan (including an example training plan); and working with the transition. (SWC)

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

IS Staff Migration to New Technology

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Introduction

For years the Information Systems staff has done a good job of providing Data Processing services to the school. However, the technology, which is being used at the school, continues to grow older. Better technology is now available and it may be the time for you to move to a new technology.

You can buy new technology. But, how to do you upgrade your technology staff? Without a qualified Information Systems Staff new technology will fail.

At Mott Community College, we were faced with a similar problem. What about the existing staff? Did we need to replace the staff along with the technology? I believed we could transition the staff along with the Systems Transition based on the following assumptions:

Current staff had key soft I.S. skills such as: analysis, problem solving, etc.
Current staff had key technical skills and could be trained to use new products.
Current staff understood the basic principles of Information Systems.
Current staff knew the business processes from a data movement perspective.

Developing a Plan

As with many major transitions, the key to success is planning. The first step in planning is analysis. You must completely and thoroughly analyze your existing technology and the technology you are planning to implement. Additionally you must analyze each individual on the Information Systems Staff. What are their current skills? What are their weaknesses? The more you know initially the easier it will be to develop a successful plan.

This analysis will become key to the plan you will develop. The first step is to determine what the Information Staff of the future will be:

Evaluate the new technology and your needs.
Determine the organization chart for the new technology.
For each position determine the generic skills needed.
Develop a job description for each "new" position.
For each position determine the specific technical skills needed.

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The next step is to evaluate the existing staff and match each individual to the best potential position in the new organization. Begin an individualized Staff Development Plan for each staff member. Since many positions are similar, you may be able to reuse some parts of each plan for other people.

Determine your general timeline. When will the new computer systems be purchased and installed? How long will it take to move applications to the new systems? How will you handle the transition? Will you allow changes to existing (old) systems while you are in the process of migrating to new systems? What is your budget? You cannot expect a staff member to be making changes to an existing system, learning new technology and working on a new computer system all at the same time. As you continue in your planning effort it may be necessary to adjust the timeline.

Based on a fairly short timeline, we determined the need for a "Migration Team". We hired a group of consultants to help us with the transition for a period of one year. The Migration Team was given the following objectives:

Help us implement the new systems.
Help us determine the best set of procedures and policies for our new systems.
Work with the existing staff to help them contribute to the decisions for our new systems and new processes.
Train existing staff to be able to support the new systems after they leave.

I believe this Migration Team was critically important to the success of our transition. They become a true part of the Information Systems Team during this key timeframe. They were treated the same as the full-time staff. Initially we relied on this team for most of the work and decisions. However, we did NOT allow the consultants to work independently. We assigned full-time staff to all project teams. Our full-time staff took the lead role in the results of the decisions.

By making the full-time staff member responsible for the decision we established ownership with our staff. Although the consultants made many of the early decisions, it was clear to the staff they would need to support those decisions in the years ahead. Thus, the staff members took the time to question the consultants and find out the reasons behind the decisions. Additionally, many decisions involved knowledge of our internal processes. The consultants would need information from our staff on our college procedures, data flow and politics. Since our existing Information Systems staff had this knowledge they were able to contribute to the decisions in this way.

Here is Mott Community College's Transition Team:

UNIX Administrator
HP-UX System Administration, HP-UX System set-up, HP-UX Performance tuning, UNIX and TCP/IP trouble shooting

LAN/WAN Administrator
LAN/WAN System Design, LAN/WAN System Installation, LAN/WAN System Maintenance, LAN/WAN System Administration, TCP/IP Management

Application Analyst/Developer (2 positions)
Business Process Analysis, System Analysis, Application Consulting, Office Automation, Some Software Development

Data Conversion Analyst Specialist
Data Analysis, Data Conversion Development, ASCII file conversions, Relational Database Conversions

Training Documentation Specialist (2 positions)
Application Software Training, Basic System Support - Windows 95, Microsoft Products, Technical Documentation, Training Documentation

Help Desk Specialist
Basic Help Desk Support - Windows 95, Microsoft Products, Priority determination, dispatching

Our team was quite large due to the short timeframe for our implementation. Smaller teams will require more time for implementation. Larger teams help get the job done quicker but obviously cost more.

After the timeframe for your migration has been determined, determine the basic skills needed for the each staff member. Some of the basic categories we used were: PC Skills, UNIX, Database, Database Management, Report Writer, LAN Administration, System Operation and Switches/Hubs/Routers. For each category write an overview of the expectations of someone with these skills.

For example: UNIX - Must be able to sign-on and use the UNIX system effectively. Must have a general knowledge of all UNIX commands. Must have a thorough understanding of files and directories. A working knowledge of file editors is required.

From this you will need to analyze the job this person will be doing and determine the actual tasks to be performed by this staff member within this grouping. This should be broken down into specific and measurable tasks. Be as specific as possible. This list should contain many objective tasks, which will need to be done and will be easily demonstrable by the staff member.

By breaking the category into tasks you will be accomplishing five key objectives:

The measurement of success will be objective and easily done.
The measurement of progress will be objective and easily done.
Staff members will know up front exactly what will be expected of them.
There will be no confusion between Management and Staff.
The list can be used to develop a training program, which will accomplish the specific needs for the individual staff member.

For example:
Using UNIX you should be able to:

Log in and out of the system.
Change your UNIX password.
Run programs.
Traverse a UNIX directory structure to access files.
Create, update, modify, remove files and file structures.
Determine and update file and directory permissions.
Edit files with a UNIX file editor.
Find filenames on the system.
Use grep and piping for selection and display of data.

Display data file contents.
Spool files.
Determine file types.
Use the UNIX commands chown, chgrp, chmod, cd, ls, pwd, who and ll.
Use UNIX man pages.

This list of task should be as specific as possible. If you will expect someone to be able to install a new PC in one hour it should say "install a new PC in one hour". Both management and staff should know exactly what is expected.

Determine a "phased" approach to the plan. Which categories need to be handled first? Which ones next? Etc. At Mott we broke each plan into 3 to 5 phases. For the applications staff we focused first on PC and UNIX skills. Next we looked at learning the new application packages. The third phase focused on database access(query and update). The fourth phase was ad-hoc reporting tools. If you do not "phase" the plan, it will get difficult to see the forest for the trees. It will be important for staff to focus on specific items. They will not be able to learn everything all at once.

Selling the Staff:

Armed with this information you are now ready to present your plan to the Information Systems staff. I would advise the following approach to your presentation:

Start by pointing out how existing (old) technology has helped the institution. Point out how processes are automated. Re-visit some of the great accomplishments of the past. After all, the existing technology is not bad; it has just become out-of-date. There is no reason for anyone to believe it is being replaced because it has failed. Chances are, it has been a major asset for the institution. Make sure you state this!

Describe the new technology you've chosen. Hopefully the Information Systems staff has been involved the selection. Point out its advantages. Show the direction of the Information Systems Market to embrace this technology. Talk about the advantages for the future of using newer technology. Paint the picture of the future in Information Systems. Be enthusiastic.

Next, talk about the technical skills the staff already has. Talk about how the generic skills such as analysis, problem solving, process flow and other skills are still necessary with new technology. Point out how their existing knowledge of the institution will help them to implement new systems, which are even better than the existing systems.

Explain the migration. How long will it take? What will the expectation be during this period? Where will they get help? If you are using a migration team of consultants (part-time or full-time), point out how the consultants will team with the staff to learn the make decisions about, implement and learn new systems.

Present the new organization chart (for full-time positions) along with positions and job descriptions (or summaries). Discuss the Migration team positions, which will be filled, and their job descriptions. Make it clear that you will work with people individually and create a plan together

to help them to transition to the Information Systems staff of the future. You may want to point out the benefits to them of increasing their job skills. We created new titles, job descriptions and salary ranges for all of the new positions at Mott Community College.

Present the idea of an individualized transition plan to help staff transition to new technology. Describe the key components of the transition plan:

The new position will have clear objectives to be met.
The plan will be task based and objective, not subjective.
The objectives will be identified at the start of the transition.
A plan will be put together with each individual.
An individual training program will be put together.
Staff will be given time to train and practice their new skills.
The transition plan will be phased with regular reviews along the way.

Building the Training Plan

Meet with each individual to formulate their Transition Plan. Since the categories (skill sets) and objectives have been identified, the next step is to identify a detailed training plan. Work with the staff member to determine the best way to train them. Consider Computer Based Training, Classroom training, Manual reading, one-on-one training from consultants and on-the-job training.

Add the training commitment to the Transition Plan. This would include: which classes the college will send the staff member to, which CBT classes will be taken, which manuals will be purchased and what on-the-job training will be done. Make sure to set specific dates and times for training. Also be sure to specify necessary time-out for training, reading and practice. For example, in some plans we have designated a staff member would be allowed to take 1:00 p.m. to 5:00 p.m. every Wednesday in May to take a certain CBT class. Also designate time for practice. We have allowed staff to take from 2 – 4 hours per week to practice their new skills. It will be important to factor this time into work schedules so people are not overburdened. If you are truly committed to the transition you should be committed to allow appropriate time for the staff to learn new skills.

Present the categories and phases to the staff member and work on a timeline for each phase. The timeline should include training, practice and actual work. The institution should make a commitment to the staff member. The staff member should make a commitment to the institution. We calculated our investment in our staff. This included: the cost of training, training materials, time to take CBT's and time to practice. You will probably be surprised at the total cost. The staff member should recognize the investment the institution is making in them. We asked the staff to accept some of the cost and be willing to use some of their own time for training and practice.

An example of a training plan from Mott Community College:

LOTUS NOTES:		
Lotus Notes Basic Training	January 6	
Practice Using email	January 6-15	on-the-job
Lotus Notes Developer I	January 18-21	
Develop test databases	January 22-Feb. 15	Every Wed. Afternoon

Lotus Notes Developer II	February 18-19
Practice Notes Development	February 20-Mar. 15 Every Wed. Afternoon

When management and the staff member is in agreement on the plan, sign it! Again this will stress the commitment to the transition.

Working the Transition

As time passes, it is necessary to review progress periodically. If your plan is clearly defined this will be easy to do. Are you still on target? Has the staff member been able to get the training promised? Has the staff member had the time to exercise their skills? Can the staff member do the objective tasks as defined in the plan? If the plan needs to be updated, do it. Don't be afraid to make appropriate changes. Of course this technology is not only new to the staff member, it is new to management too. If you discover something new, update the plans as quickly as possible.

Be honest and up-front with your staff. You owe them praise when they do well. You also owe it to them to let them know if they're falling behind. Double check to see if you are giving them enough time to adjust to the new systems. Remember that you can't expect them to do two full-time jobs at once. If you want them to learn something new you must remove some of their old responsibilities.

Don't forget to use the Migration Team to help with the transition. Make sure consultants aren't developing "on their own". Ask yourself, if the consultants were to leave tomorrow could the existing staff handle the job?

Do a formal review at the end of each phase. Reward staff for their progress! You'll be surprised at how well people can learn new technology when you give them the opportunity to shine!